ẽ-conomics Supplements: The Antidote to Teaching and Learning Economics through Open and Distance Learning

Lilian Kek Siew Yick; Chiam Chooi Chea
Open University Malaysia
lilian@oum.edu.my; chooi_chea@oum.edu.my

Abstract

Teaching and learning through distance education can be challenging for both the educator and the learner. The challenges are further intensified for quantitative courses such as Mathematics, Accounting, Finance and Economics. In conventional settings, learning occurs during classroom activities whereby learners do hands-on exercises, trial-and-error practices, and obtain on-the-spot feedback from their teachers throughout the course. Distant learners, on the other hand, mainly struggle through these courses in isolation. Educators also find it difficult to develop teaching and learning activities that cater to the needs of these isolated learners. Besides encouraging independent learning, they must also keep learners engaged, motivated and focused throughout the course. Due to the difficulty level of the courses, it is not surprising that these learners usually perform below average in their assessments. At the Open University Malaysia (OUM), The Economics Support Team (TEST) was formed to address the above issue. The team, made up of 5 subject matter experts in the field of Economics, designed a unique teaching and learning supplement, ẽ-conomics to support a level-4 course, Principles of Macroeconomics. A total of 60 learners from two OUM learning centres who participated in the study, received the ẽ-conomics supplements periodically throughout the course. At the end of the course, data was gathered from the participants using a 20-items questionnaire. The performances of the participants were then compared to the overall learner performance for the course. Results were tabulated and analysed using descriptive statistics. This study aims to determine the effectiveness of ẽ-conomics supplements in (1) enhancing teaching and learning activities (2) instill interest, motivation and confidence to learn the course; and (3) improve overall performance of learners in the course. The outcome of this study will be useful for Open and Distance Learning institutions to produce effective teaching and learning activities for Economics and other quantitative courses delivered through open distance learning.

Keywords: *Teaching and learning activities, Assessment, Economics*

Introduction

Quality education has been the tenet of Open University Malaysia (OUM) since its inception in year 2000. Being Malaysia's first Open and Distance Learning (ODL) institution, OUM leverages on technology and adopts a flexible mode of learning in providing a conducive and engaging learning environment at a competitive and affordable cost to its learners. In addition to its mission to widen access to higher education and lifelong learning opportunities, OUM also aims to produce quality and competent graduates thus places strong emphasis on improving its teaching and learning activities.

Teaching and learning through distance education can be challenging for both the educator and the learner. The challenges are further intensified for quantitative courses such as Mathematics, Accounting, Finance and Economics. In conventional settings, learning occurs during classroom activities whereby learners do hands-on exercises, trial-and-error practices, and obtain on-the-spot feedback from their teachers throughout the course. Distant learners, on the other hand, mainly struggle through these courses in isolation. Educators also find it difficult to develop teaching and learning activities that cater to the needs of these isolated learners. Besides encouraging independent learning, they must also keep learners engaged, motivated and focused throughout the course. Due to

the difficulty level of the courses, it is not surprising that these learners usually perform below average in their assessments.

Majority of OUM learners comprised of working adults who may have left school for a number of years and has now returned to pursue higher education. Taking into consideration the unique characteristics of this group of learners, additional support must be provided to help them cope with the current demands of the academia apart from developing learners' interest, motivation and understanding for a course.

This study attempts to determine the effectiveness of using *ẽ-conomics* supplements in (1) enhancing teaching and learning activities (2) instill interest, motivation and confidence to learn the course; and (3) improve overall performance of learners in the course.

Literature Review

Lifelong learning has come to involve a variety of learning experiences or modes (Knapper, 1998; Knapper and Cropley, 2000). These modes include formal university campus teaching, workplace open learning, modular flexible learning programme, correspondence-based distance learning courses etc. Flexible, open and distance learning are educational approaches that are designed to be adaptable to the needs of a variety of learners. Some authors draw a distinction between flexible and open learning. Cooper (1996), for example takes flexible learning to include, modularisation and accreditation of prior learning. By contrast, open learning then relates specifically to the characteristics of allowing the learner to determine the time, location, and pace of learning. However, there are authors regard that both flexible and open learning is the same approach, just a matter of different names (Rowntree, 1991) and Race (1994). It is because distance learning is usually understood to involve open learning applied to situations in which there is a geographical separation between the learners and the learning institutions.

Based on Keegan, 1990; 1996, generally speaking, distance education can be understood in terms of the following five dimensions:

1. separation of teacher and learners;
2. use of media;
3. provision of two-way communication;
4. influence of an educational system; and
5. an industrial base operation.

Among the theories of independence and autonomy, those by Charles Wedemeyer and Michael Moore are well known. Believing that distance education is essentially a kind of independent study, Wedemeyer proposed a system with ten characteristics highlighting learner independence and the means of achieving it. His theoretical framework also describes the characteristics and teaching-learning situation in an independent study system (Simonson et al, 2000). Holmberg (1989), widely regarded as a seminal author in the field of distance and open education, also stresses "support" for students as being an important factor in successful learning. He focuses on the idea of the "emotional involvement" of the students in their study and the necessity for students to feel a rapport with both their teachers and the providing institution (Holmberg, 1989, p.162).

Online teaching is redefining faculty members' schedules, as well as their duties and relationships with students by requiring more pre-course planning, distribution of time online over the course implementation, and virtual connectedness with students on a daily basis (Young, 2002). The utilisation of emerging technologies in distance education led to the American theory of equivalency, which seeks to make equivalent the learning experiences of all students no matter how they are linked to the resources or instruction they require (Simonson et al., 2000). According to this theory, distance

education providers have the responsibility to design instructions that provide learners with equal learning experiences and values.

Desmond Keegan's theoretical framework for distance education focuses on the concept of reintegration of teaching acts. To Keegan, education requires intersubjectivity, and it is crucial to recreate artificially this shares experience between teacher and student by making learning materials as dialogical as possible and by utilising different communication techniques (Simonson et al., 2000).However, not all of the research studying student performance found positive results for online students compared with their classroom counterparts. Professors at Michigan State University found that students who completed an economics course online did not fare well as students who completed a campus-based course (Brown and Liedholm, 2002).The study focused on 89 students in two online course sections and 363 students enrolled in two traditional classroom courses. Interestingly, the researchers found that women's performance was not diminished by the online environment as much as the men's, even though women traditionally did not perform as well in economics courses as men. In additional, the study discovered that students in online courses did not spend as much time studying as traditional campus-based students. However, this particular study was not without criticism for reaching unwarranted conclusions, ignoring individual differences, and not distinguishing enough difference in the final level of student learning (Wertheim, 2002).

Based on literature, it is important that distant educators consider new ways of developing teaching and learning mechanisms to enhance the learning experience of distant learners and to keep them engage and motivated especially throughout quantitative courses.

Methodology

Five subject matter experts in the field of Economics were selected to form *The Economics Support Team* (TEST). TEST designed a unique teaching and learning supplement, *ẽ-conomics* to support a level-4 course, Principles of Macroeconomics. *ẽ-conomics* is a guided supplement that contains questions developed based on the learning outcomes of the course. The questions tested learners understanding based on different levels of the Bloom's Taxanomy. As a guide, keywords are provided for each presented problem. The guiding principle behind *ẽ-conomics* is that learners should be taught in a similar manner in which they will be assessed.

A total of sixty learners from two OUM learning centres were selected to participate in the September 2008 semester study. They received the *ẽ-conomics* supplements periodically throughout the course. The supplements were uploaded into the learning management system, myLMS and notifications as well as reminders were sent to the learners' emails. At the end of the course, learners gave their opinion on the effectiveness of the supplements in supporting their learning for the course. Data were gathered from the participants using a 20-items questionnaire. Questionnaires were collected from the participants after their final assessment.

The performances of these participants were measured at the end of the semester by their final grades for the course. These results were also compared to the overall learners who registered for the same course. Results were tabulated and analysed using descriptive statistics.

Analysis and Discussions

All 60 respondents selected for the study completed and returned the questionnaire. Data collected were analysed using SPSS software. Descriptive statistics on the respondents demographic are presented according to gender, learning centre, ethnic, and age .The detailed statistical data (frequency and percentage) can be obtained in Table (i), Table (ii), Table (iii) and Table (iv).

Table 1 (i)

Gender	Frequency	Percent
Male	23	38.3
Female	37	61.7
Total	**60**	**100**

Table 1 (ii)

Learning Centres	Frequency	Percent
Klang Valley	15	25
Outside Klang Valley	45	75
Total	**60**	**100**

Table 1 (iii)

Ethnic	Frequency	Percent
Malay	43	71.7
Chinese	6	10
Indian	8	13.3
Others	3	5
Total	**60**	**100**

Table 1 (iv)

Age	Frequency	Percent
<30	15	25
30-40	13	21.7
41-50	28	46.7
>50	4	6.7
Total	**60**	**100**

Based on the findings, female respondents (61.7%) outnumbered the male respondents (38.3%). Majority of the respondents (75%) studied at the learning centre out of Klang Valley, while the remaining 25% were from the Klang Valley learning centre. Of the 60 respondents who participated in the study, 71.7% are Malays, 10% Chinese, 13.3% Indians and 5% from the other ethnic groups. Majority of the participants were between the age group of 41-50 (46.7%) and below 30 (25%). Respondents between the age of 30-40 made up 21.7% of the group while a small majority (6.7%) were above 50 years.

The 20-item questionnaire used to obtain feedback from participants in the study with regards to the effectiveness of the *ẽ-conomics* supplements was based on a 5-point Likert ranging from Strongly Disagree (1) to Strongly Agree (5). The Cronbach' alpha of 0.83 suggested good internal consistency reliability for the scale with this sample. Table 2 shows the mean score for 20 items in the questionnaire.

Table 2

Questions	Mean	Questions	Mean	Questions	Mean	Questions	Mean
Q1	4.15	Q6	4.27	Q11	4.28	Q16	4.25
Q2	4.13	Q7	3.88	Q12	4.35	Q17	3.77
Q3	4.22	Q8	4.17	Q13	4.35	Q18	4.22
Q4	4.25	Q9	4.17	Q14	3.93	Q19	3.98
Q5	4.13	Q10	4.28	Q15	3.83	Q20	4.5

Out of twenty questions in table 2, fifteen questions had mean scores above 4 while five questions recorded mean scores between Neutral (3) and Agree (4). This indicates that most learners (75%) concur on the effectiveness of the *ẽ-conomics* supplements in instilling interest and confidence in learning the course. Although the remaining 25% did not score Agree (4) and above, their mean scores were very close to 4, with the lowest mean score being 3.77 (Q17). (Question 17 reads *Supplementary Exercises should be used for quantitative subjects only.*).

Participants in the study found supplementary exercises to be helpful in learning difficult concepts in the course (Q1, Q2, Q4, Q8 and Q12). Besides, they feel more confident to attempt their upcoming assessments as the exercises were able to stimulate their rationalisation of theories (Q9, Q11 and Q13). However, these exercises were attempted by learners mostly on their own and were seldom used as a supplementary tool during tutorial classes. The reason could be attributable to the fact that the exercises had provided key answers and guidance hence there would be no need for learners to discuss the questions with their tutors (Q7 and Q19) or their peers (Q14 and Q15). Majority learners also relied on the supplementary exercises during revision prior to their final assessments (Q3 and Q18). Learners who have used the supplementary exercises felt that it makes learning more

meaningful as it links to the learning outcomes for the course (Q5 and Q16). They also felt that supplementary exercises are suitable for learning Economics through distance learning (Q10) and should be provided for other OUM courses as well (Q6 and Q20).

At the end of the semester, the overall results of all learners registered for the course were obtained and the following results were tabulated in Table 3.

Table 3

Grade	Results of Other Registered Learners	%	Results of Sample Group	%
A	28	6.3%	4	6.7%
A-	15	3.4%	8	13.3%
B+	43	9.6%	13	21.7%
B	43	9.6%	16	26.7%
B-	40	8.9%	11	18.3%
C+	69	15.4%	6	10%
C	79	17.7%	2	3.3%

A total of 507 learners registered for the course in the chosen semester of study. The sampled participants (60 learners) made up 11.8% of the population. Of the sample, a total of 6.75% scored A, 13.3% scored A-, 21.7% scored B+, 26.7% scored B, 18.3% scored B-, 10% scored C+ and 3.3% managed to score a grade C. None of the participants of the study scored below C as compared to the 130 (25.6%) learners of the population who were not included in the study. Generally, learners who were provided with the *ẽ-conomics* supplements performed better compared to the overall population who were not provided with the additional learning supplements. The below average performance were also not noted within the sampled group.

Recommendations and Conclusions

ẽ-conomics supplements used in this study could enhance the teaching and learning activities for the quantitative course, Principles of Macroeconomics. Distant educators must adopt a proactive approach to understand and develop additional learning tools to support distant learning as learners tend to lose confidence and motivation if the course becomes too difficult to apprehend. Besides the adult learners may have left school for a number of years, and their struggle to cope with the existing demands of the academia should be empathically considered.

The *ẽ-conomics* supplements were found to instil interest and increase learners' motivation and confidence to learn the quantitative course via distance learning. Learners feel more confident and ready to attempt their final assessments as the supplements had prepared them mentally to face the upcoming challenge. As the supplements were developed based on learning outcomes, learners become more aware of what is required from them throughout the course. This ultimately leads to meeting the course objectives and makes teaching and learning more meaningful to both the educators and learners.

The findings of the study also revealed that learners who were periodically given the *ẽ-conomics* supplements outperformed those without the supplementary support. The additional learning tools which incorporate higher level order questions closely resemble the assessment approach in which the learners will be assess. When learners learn and are taught in a similar manner in which they will be assessed, this would result in a more confident and competent learner.

Since the study was confined to a particular course in a selected semester, future researchers may consider expanding the study to include a wider sample of the population or even to other quantitative

courses such as Mathematics, Accounting and Finance. Demographic variables and other motivational factors that may affect the findings of the study should also be included in future researches. However, careful consideration must be given in developing the content of the supplements in order to meet the needs of the distant learner, the objectives of the course as well as the goal to create a competent learner.

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